

Claims

1 1. A method for producing a secure subspace for a
2 transaction, said method comprising:

3 from an operating system task, attaching a subtask
4 that will restrict application addressing; and

5 wherein said attaching includes defining a
6 subspace address environment as home space within a
7 dispatchable unit access list (DU-AL) associated with
8 said subtask.

1 2. The method of claim 1, wherein said subtask
2 comprises a first subtask, said subspace comprises a first
3 subspace and a first application runs under said first
4 subtask, and wherein said method further comprises repeating
5 said attaching to define a second subtask having a second
6 subspace address environment as home space within a DU-AL
7 associated with said second subtask, wherein a second
8 application runs under said second subtask.

1 3. The method of claim 2, wherein said first subspace
2 is isolated from said second application and said second
3 subspace is isolated from said first application
4 notwithstanding execution of said first application or said
5 second application in address register addressing mode.

1 4. The method of claim 2, wherein said operating
2 system task and said first subtask share said first
3 subspace, and said operating system task and said second
4 subtask share said second subspace.

1 5. The method of claim 2, further comprising
2 repeating said subtask attaching for n additional subtasks,
3 each subtask of said n additional subtasks having a
4 different subspace address environment as home space within
5 its associated DU-AL, wherein each subspace of said first,
6 second and n additional subtasks is isolated from an
7 application running under any other subtask of said first,
8 second and n additional subtasks.

1 6. The method of claim 5, wherein each subspace
2 address environment of said first, second and n additional
3 subtasks comprises a different subspace of an address
4 environment of said operating system task.

1 7. The method of claim 1, further comprising prior to
2 said attaching:

3 creating said subspace;

4 adding said subspace to a DU-AL associated with
5 said operating system task;

6 assigning a range of storage that an application
7 running in the subspace can access; and

8 performing a branch in subspace group (BSG) to
9 make the subspace the active addressing environment.

1 8. The method of claim 7, wherein said performing the
2 BSG comprises employing a BSG instruction to specify an
3 access list entry (ALET) in the DU-AL associated with said
4 operating system task.

1 9. The method of claim 1, wherein said subtask
2 comprises a first subtask and a first application runs under
3 said first subtask and wherein said method further comprises
4 creating a second subtask from said first subtask, said
5 creating comprising from said first subtask, attaching said
6 second subtask thereto, said second subtask also having said
7 subspace address environment as home space within a DU-AL
8 associated therewith, wherein said subspace is shared by
9 said operating system task, said first subtask and said
10 second subtask.

1 10. The method of claim 9, wherein said subspace
2 comprises a first subspace, and said method further
3 comprises repeating said attaching from said operating
4 system task to define a third subtask having a second
5 subspace address environment as home space within a DU-AL
6 associated with said third subtask, wherein a second
7 application runs under said third subtask, and wherein said
8 first application and said second application are unable to
9 access each other's address environment notwithstanding
10 execution thereof in address register addressing mode.

1 11. At least one program storage device readable by a
2 machine, tangibly embodying at least one program of
3 instructions executable by the machine to perform a method
4 for producing a secure subspace for a transaction, said
5 method comprising:

6 from an operating system task, attaching a subtask
7 that will restrict application addressing; and

8 wherein said attaching includes defining a
9 subspace address environment as home space within a
10 dispatchable unit access list (DU-AL) associated with
11 said subtask.

1 12. The at least one program storage device of claim
2 11, wherein said subtask comprises a first subtask, said
3 subspace comprises a first subspace and a first application
4 runs under said first subtask, and wherein said method
5 further comprises repeating said attaching to define a
6 second subtask having a second subspace address environment
7 as home space within a DU-AL associated with said second
8 subtask, wherein a second application runs under said second
9 subtask.

1 13. The at least one program storage device of claim
2 12, wherein said first subspace is isolated from said second
3 application and said second subspace is isolated from said
4 first application notwithstanding execution of said first
5 application or said second application in address register
6 addressing mode.

1 14. The at least one program storage device of claim
2 12, wherein said operating system task and said first
3 subtask share said first subspace, and said operating system
4 task and said second subtask share said second subspace.

1 15. The at least one program storage device of claim
2 12, further comprising repeating said subtask attaching for
3 n additional subtasks, each subtask of said n additional
4 subtasks having a different subspace address environment as
5 home space within its associated DU-AL, wherein each
6 subspace of said first, second and n additional subtasks is
7 isolated from an application running under any other subtask
8 of said first, second and n additional subtasks.

1 16. The at least one program storage device of claim
2 15, wherein each subspace address environment of said first,
3 second and n additional subtasks comprises a different
4 subspace of an address environment of said operating system
5 task.

1 17. The at least one program storage device of claim
2 11, further comprising prior to said attaching:

3 creating said subspace;

4 adding said subspace to a DU-AL associated with
5 said operating system task;

6 assigning a range of storage that an application
7 running in the subspace can access; and

8 performing a branch in subspace group (BSG) to
9 make the subspace the active addressing environment.

1 18. \The at least one program storage device of claim
2 17, wherein said performing the BSG comprises employing a
3 BSG instruction to specify an access list entry (ALET) in
4 the DU-AL associated with said operating system task.

1 19. The at least one program storage device of claim
2 11, wherein said subtask comprises a first subtask and a
3 first application runs under said first subtask and wherein
4 said method further comprises creating a second subtask from
5 said first subtask, said creating comprising from said first
6 subtask, attaching said second subtask thereto, said second
7 subtask also having said subspace address environment as
8 home space within a DU-AL associated therewith, wherein said
9 subspace is shared by said operating system task, said first
10 subtask and said second subtask.

1 20. The at least one program storage device of claim
2 19, wherein said subspace comprises a first subspace, and
3 said method further comprises repeating said attaching from
4 said operating system task to define a third subtask having
5 a second subspace address environment as home space within a
6 DU-AL associated with said third subtask, wherein a second
7 application runs under said third subtask, and wherein said
8 first application and said second application are unable to
9 access each other's address environment notwithstanding
10 execution thereof in address register addressing mode.

1 21. A system for producing a secure subspace for a
2 transaction, said system comprising:

3 means for attaching, from an operating system
4 task, a subtask that will restrict application
5 addressing; and

6 wherein said means for attaching includes means
7 for defining a subspace address environment as home
8 space within a dispatchable unit access list (DU-AL)
9 associated with said subtask.

1 22. The system of claim 21, wherein said subtask
2 comprises a first subtask, said subspace comprises a first
3 subspace and a first application runs under said first
4 subtask, and wherein said system further comprises means for
5 repeating said attaching to define a second subtask having a
6 second subspace address environment as home space within a
7 DU-AL associated with said second subtask, wherein a second
8 application runs under said second subtask.

1 23. The system of claim 22, wherein said first
2 subspace is isolated from said second application and said
3 second subspace is isolated from said first application
4 notwithstanding execution of said first application or said
5 second application in address register addressing mode.

1 24. The system of claim 22, wherein said operating
2 system task and said first subtask share said first
3 subspace, and said operating system task and said second
4 subtask share said second subspace.

1 25. The system of claim 22, further comprising means
2 for repeating said subtask attaching for n additional
3 subtasks, each subtask of said n additional subtasks having
4 a different subspace address environment as home space
5 within its associated DU-AL, wherein each subspace of said
6 first, second and n additional subtasks is isolated from an
7 application running under any other subtask of said first,
8 second and n additional subtasks.

1 26. The system of claim 25, wherein each subspace
2 address environment of said first, second and n additional
3 subtasks comprises a different subspace of an address
4 environment of said operating system task.

1 27. The system of claim 21, further comprising prior
2 to said means for attaching:

3 means for creating said subspace;

4 means for adding said subspace to a DU-AL
5 associated with said operating system task;

6 means for assigning a range of storage that an
7 application running in the subspace can access; and

8 means for performing a branch in subspace group
9 (BSG) to make the subspace the active addressing
10 environment.

1 28. The system of claim 27, wherein said means for
2 performing the BSG comprises means for employing a BSG
3 instruction to specify an access list entry (ALET) in the
4 DU-AL associated with said operating system task.

1 29. The system of claim 21, wherein said subtask
2 comprises a first subtask and a first application runs under
3 said first subtask and wherein said system further comprises
4 means for creating a second subtask from said first subtask,
5 said means for creating comprising means for attaching said
6 second subtask to said first subtask, said second subtask
7 also having said subspace address environment as home space
8 within a DU-AL associated therewith, wherein said subspace
9 is shared by said operating system task, said first subtask
10 and said second subtask.

1 30. The system of claim 29, wherein said subspace
2 comprises a first subspace, and said system further
3 comprises means for repeating said means for attaching from
4 said operating system task to define a third subtask having
5 a second subspace address environment as home space within a
6 DU-AL associated with said third subtask, wherein a second
7 application runs under said third subtask, and wherein said
8 first application and said second application are unable to
9 access each other's address environment notwithstanding
10 execution thereof in address register addressing mode.

1 31. A system for producing a secure subspace for a
2 transaction, said system comprising:

3 an operating system transaction manager adapted to
4 attach a subtask to an operating system task, wherein
5 said subtask restricts application addressing; and

6 wherein said attach includes said operating system
7 transaction manager being adapted to define a subspace
8 address environment as home space within a dispatchable
9 unit access list (DU-AL) associated with said subtask.

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